



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

AB

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,301	02/23/2004	Akira Kuibira	39.034	2300

29453 7590 11/01/2004

JUDGE PATENT FIRM
RIVIERE SHUKUGAWA 3RD FL.
3-1 WAKAMATSU-CHO
NISHINOMIYA-SHI, HYOGO, 662-0035
JAPAN

EXAMINER

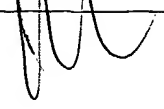
PAIK, SANG YEOP

ART UNIT	PAPER NUMBER
----------	--------------

3742

DATE MAILED: 11/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/708,301	Applicant(s) KUIBIRA ET AL. 	
	Examiner Sang Y Paik	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/12/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the specification shows the "□m" as the unit length for the surface roughness or warpage, but it is not clear if such means square meter or some other unit length. In light of the known semiconductor industry involving ceramic susceptors, the surface roughness or warpage is usually represented in terms of microns (μm) for such microscopic measurement. For the purposes of examining the symbol "□m" is interpreted as microns. However, the applicant needs to amend the specification to clearly define such unit length.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1- 8, 10, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kholodenko et al (US 6,310,755).

Kholodenko et al shows a holder having a ceramic susceptor having a retaining side with a resistive heating element incorporated and positioned in the susceptor toward the side opposite the retaining side, and a metal plate provided on the susceptor opposite the retaining side.

Kholodenko et al further shows that the ceramic susceptor which is made of one of alumina, aluminum nitride, silica, silicon carbide, silicon nitride or boron carbide is bonded to the metal

Art Unit: 3742

plate which is made of metal with the combination aluminum, silicon carbide, copper, tungsten and/or molybdenum.

With respect to claims 5 and 7, the claimed thermal conductivity is also inherently anticipated by Kholodenko et al since it shows that the ceramic susceptor and the metal plate are made of the same material or composition as claimed.

With respect to claim 10, Kholodenko et al further shows that the susceptor has the diameter of about 200mm.

4. Claims 1-3, 5-9, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kadomura et al (US 5,968,273).

Kadomura et al shows a holder having a ceramic susceptor having a retaining side with a resistive heating element incorporated and position in the susceptor toward the side opposite the retaining side, the metal plate, which is made of aluminum and silicon carbide, having a thickness thicker than the ceramic susceptor bonded to the ceramic susceptor on the opposite side of the retaining side, and the ceramic substrate made of aluminum nitride.

With respect to claims 5 and 7, the claimed thermal conductivity is also inherently anticipated by Kadomura et al since it shows that the ceramic susceptor and the metal plate are made of the same material or composition as claimed.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3742

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kholodenko et al (US 6,310,755) or Kadomura et al (US 5,968,273) in view of Hiramatsu et al (US 6,507,006).

Kholodenko et al or Kadomura et al shows the holder claimed except the claimed porosity.

Hiramatsu shows a semiconductor wafer chuck with a ceramic substrate with the porosity less than 5%, and, preferably from 0.01 to 3%. In view of Hiramatsu, it would have been obvious to one of ordinary skill in the art to adapt Kholodenko et al or Kadomura et al with the claimed porosity to more effectively maintain the voltage drop in the ceramic substrate to improve the chucking of a wafer to the heating surface.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kholodenko et al (US 6,310,755) or Kadomura et al (US 5,968,273) in view of Ito et al (US 6,717,116).

Kholodenko et al or Kadomura et al shows the holder claimed except the claimed warpage.

Ito et al shows a semiconductor wafer heater having a surface flatness or warpage of less than 50 microns. In view of Ito et al, it would have been obvious to one of ordinary skill in the art to adapt Kholodenko et al or Kadomura et al with the retaining side with the claimed warpage to ensure a uniform heating transfer between the heating surface and a heated object.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y Paik whose telephone number is 703-308-1147. The examiner can normally be reached on M-F (9:00-4:00) First Friday Off.

Art Unit: 3742

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Paik

Sang Y Paik
Primary Examiner
Art Unit 3742

syp